



Release Notes for Cisco Access Registrar, 4.2

Cisco Access Registrar 4.2 provides RADIUS authentication, authorization, and accounting (AAA) services for service providers and enterprises. Cisco Access Registrar (CAR) supports service provider deployment of access services by centralizing AAA information and simplifying provisioning and management.

CAR is a standards-based Remote Authentication Dial-in User Service (RADIUS) and proxy RADIUS server designed for high-performance, extensibility, and integration with external data stores and systems.

CAR supports a range of access technologies from traditional dial and broadband to wireless LANs and mobile wireless. CAR supports the latest wireless authentication protocols such as Extensible Authentication Protocol and Protected EAP used in wireless LAN deployments. CAR also is able to make real-time AAA requests to billing systems to support prepaid applications.

These release notes provide information about this release of CAR 4.2.



Note

CAR 4.2 can be used with Solaris 9, Solaris 10, or Red Hat Enterprise Linux 4.0 32-bit operating system using kernel 2.6.9-22.0.2.EL or later, and Glibc version: glibc-2.3.4-2.13 or later.

Releases of CAR from the 4.1.4 version onwards do not support the Solaris 8 operating system.

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New Features

The following sections describe new features in each release:

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New Features In Cisco Access Registrar 4.2.2

CAR 4.2.2 introduces the following feature

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New Properties in CAR 4.2.2

- [NumberOfRadiusIdentifiersPerSocket](#)

NumberOfRadiusIdentifiersPerSocket

NumberOfRadiusIdentifiersPerSocket is found under **/Radius/Advanced**. This represents the number of RADIUS Identifiers that Cisco AR can use per source port, while proxying requests to remote servers.

To use a different source port for every request that is proxied, you need to set the value of this property to one.

New Features In Cisco Access Registrar 4.2

**Note**

The first version of CAR 4.2 is released as CAR 4.2.1.

CAR 4.2 introduces these features.

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WiMAX Support

WiMAX support is based on the WiMAX forum NWG_R1.1.0_Stage-3 specifications. For CAR to interact with ASN-GW (a.k.a BroadBand Wireless Gateway BWG) and Home Agent, a new WiMAX service is added in CAR 4.2. The type of this service is “wimax”. WiMAX service contains—Session Manager (with a session-cache resource manager and HA resource manager), Query Service that is connected to the session manager configured for this service, and Prepaid Service, which are required to connect all the flows appearing in CAR for WiMAX. This service will be used as a container for the new key generation modules and the existing modules such as EAP services.

TPS-Based Licensing

CAR 4.2 follows a new licensing model—based on transactions per second, as opposed to the feature based licensing model in the earlier releases. CAR 4.2 supports the new licensing part numbers that are count based.

While upgrading to CAR 4.2, the licenses of previous versions cannot be used. Backward compatibility support in terms of license will not be available in this version.

Session Scalability

In CAR 4.2 session scalability feature adopts refactoring of current session data structures, as the effort required to build a session manager bottom-up is huge. In this release, the memory capacity to store sessions is enhanced from one million to four millions. The capacity is dependent on the number of attributes that are being captured for each session.

CAR creates sessions in the memory as long as memory is available in the system. When there is no memory in the system, the radius process gets crashed. To avoid crashing, **MemoryLimitForRadiusProcess** property is added in CAR 4.2.

The default value of **MemoryLimitForRadiusProcess** is 3500 Megabytes. This property is under **/radius/advanced**. When the radius process uses more memory than the configured limit, further sessions are not created and CAR rejects further incoming requests.

Dynamic Service Authorization

This feature allows you to access external DBs like LDAP and Oracle first to know which remote servers authenticated services need to be relayed. The requirement is achieved by introducing following three new environment variables:

- Re-Authentication-Service
- Re-Authorization-Service
- Re-Accounting-Service

The service that is selected through scripts, now has an option to set these variables (as appropriate to the phase in which the packet is in) to re authenticate, reauthorize, or recount using another service, thereby the services can be chained using this environment variable.

To put a limit on the count of number of services that can be chained, a static value of 10 has been chosen. This limit can be dynamically set (in case required in the field – but not likely) using the **Dynamic-Service-Loop-Limit** environment variable, which will override the static value of 10.

As part of this feature, the existing LDAP and ODBC service will be opened for look ups for accounting. This means that LDAP and ODBC (Auth service) can be configured as an accounting service. They will essentially look up the database using the attributes in the accounting packet and map necessary information onto environment dictionary (as per the LDAP/ODBCToEnvironment mapping). The other two mappings will not be supported.

Oracle 10g Client,11g Server Support

In this release, CAR has been enhanced to support Oracle 10g Client and 11g Server. CAR 4.2 has been tested and certified with Oracle 9i/10g/11g servers via Oracle 9i/10g clients. CAR 4.2 support for Oracle 8i client/server has been discontinued (Oracle has withdrawn support for 8i client library).

LDAP Bind-Based Authentication

The LDAP client library is enhanced to support LDAPv3. However, no extended features in LDAPv3 are supported. The existing LDAP remote server is enhanced to support bind-based authentication in addition to the existing password-fetch based authentication. A new property, `UseBindBasedAuthentication`, is added to the existing LDAP remote server to enable or disable bind-based authentication. This is a Boolean value and can be set to TRUE or FALSE.

CRL Support

CAR 4.2 supports CRLs as defined by RFC 3280. HTTP and LDAP-based CRL look ups are supported. CAR 4.2 have provision to support CRL fetching and enforcement. The protocols supported for fetching CRLs would be LDAP and HTTP.

A new property, `CRLDistributionURL`, is added to the existing TLS-based EAP authentication services. When this property is configured, CAR fetches the CRL from the specified URL at startup. There is a background thread that stores the state of these CRLs and when any of them gets expired it fetches the new version of CRL from the URL again. The expiry information of the CRL will be encoded within it. CAR 4.2 verifies the certificate during the TLS-based authentication. CRL validation is done before accepting a client certificate during the TLS authentication.

Shared Secret Hiding

A new property, `HideSharedSecretAndPrivateKeys`, is added to `/Radius/Advanced` configuration section in `aregcmd`.

The `HideSharedSecretAndPrivateKeys` property hides:

- The secret that is shared between a Radius Client and a Radius Server or between two radius servers in a radius proxy scenario.
- The `PrivateKeyPassword` under the certificate-based EAP services.

When this property is set to TRUE, the following properties are displayed as `<encrypted>`:

- `PrivateKeyPasswords` in:
 - `peap-v0` service
 - `peap-v1` service
 - `eap-tls` service
 - `eap-ttls` service

- eap-fast service
- SharedSecret in:
 - RemoteServers of type radius
 - RemoteServers of type map-gateway
 - Clients object
 - Resource Manager of type usr-vpn under Gateway subobject
- PseudonymSecret in eap-sim service
- DynamicAuthSecret under DynamicAuthorizationServer subobject in Clients object
- RepSecret under Replication
- Secret in /radius/advanced/DDNS/TSIGKeys

When the value for this property is set to FALSE, all the above properties are displayed in clear text.

Server Virtualization Support

Server virtualization creates virtual machines (VMs) that run separate operating systems. The result is that the VM operates as if it were a separate server with its own operating system. One advantage of server virtualization is its flexibility—server virtualization allows multiple operating systems to be present on a physical machine.

A logical domain(LDoms) is a discrete logical grouping with its own operating system, resources, and identify within a single computer system. Each logical domain can be created, destroyed, reconfigured, and rebooted independently, without requiring a power cycle of the server. Variety of applications software can run in different LDoms and can be kept independent for performance and security purposes.

CAR 4.2 supports deployment on virtual servers over LDoms. A setup involving Sun T 5220 is created and CAR 4.2 is tested by means of running regressions and other tests ensuring CAR 4.2 works fine in LDoms.

Enhancements in Cisco Access Registrar 4.2

Table 1 gives details on the enhancements made in CAR 4.2 over the earlier versions.

Table 1 Enhancements in CAR 4.2

Bug	Description
CSCsu49676	<p>CAR bypasses the incoming traffic throttling.</p> <p>A new property under each Client configuration called EnforceTrafficThrottling is introduced. This property is enabled by default, and you can turn off enforcement for a particular client. Additionally, you are offered more flexibility in choosing whether to enforce throttling by means of scripting. A new environment variable, called Enforce-Traffic-Throttling, has been introduced which can be set to TRUE or FALSE using an extension point script. This environment variable takes precedence over the Client configuration settings, when both are used.</p>
CSCsq53135	<p>CAR supports newer ACS Remote Agent</p> <p>CAR 4.2 supports the Windows Domain Controller/Active Directory (WDC/AD) and enables you to authenticate users present in a WDC/AD using the CiscoSecure Remote Agent (CSRA).</p> <p>Note You can download the CiscoSecure Remote Agent from http://www.cisco.com/cgi-bin/tablebuild.pl/acs_appl_macgyver. The file to download is Remote-Agent-ACSse-win-v4.2.0.124-K9.zip, described as Remote Agent for Windows for Solution Engine, 4.2.0.124, dated 12-MAR-2008.</p> <p>Note CAR 4.2 will only support Remote agent 4.2. It will not support the older versions.</p>
CSCee44981	<p>CAR sets the sessionkey value for Session Manager.</p> <p>A new property under each SessionManager configuration called SessionKey is introduced. The SessionManager checks whether the environmental variable Session-Key is set. If the environmental variable is set, the server uses it as the sessionkey. If environmental variable Session-Key is not set then SessionManager gets the value configured in the SessionKey property under SessionManager.</p> <p>SessionKey can be a combination of attributes separated by colon. The values for those attributes are obtained from the RequestDictionary. If any one of the attributes that is configured for the sessionkey is not present in the RequestDictionary, CAR will drop the request.</p> <p>However, if Session-Key is not set, SessionManager uses NAS-Identifier and NAS-Port to create the sessionkey.</p>
CSCeh50897	<p>Request to have query-sessions list cache Resource Manager contents.</p> <p>In CAR 4.2, the query-session is modified to list the contents of the Resource Manager cached attributes in addition to session attributes.</p>

System Requirements



Note

Before you begin the software installation, ensure that your server has the most recent OS software including all relevant or recommended patches.

This section describes the system requirements to install and use the CAR software.

Full Installation

Table 2 lists the system requirements for a full installation of CAR.

Table 2 *Full-Installation Requirements*

Component	Requirements
CPU Architecture	SPARC for Solaris or Intel for Linux
CAR 4.2 OS Versions	Solaris 9, Solaris 10 or Red Hat Enterprise Linux 4.0 using kernel version 2.6.9-22.0.2.EL (or later) and glibc version 2.3.4-2.13 (or later).
Minimum RAM	256 MB
Recommended RAM	4 GB
Recommended Disk Space	10 GB

Client-Only Installation

Table 3 lists the system requirements for installing the client-only component of CAR.

Table 3 *Client-Only Requirements*

Component	Requirements
CPU Architecture	SPARC
OS Version	Solaris 9 or Solaris 10
Minimum RAM	32 MB
Recommended RAM	64 MB
Recommended Disk Space	120 MB



Note

The client-only installation is available only when using the Solaris operating system.

The recommended disk space does not include the amount of space needed for accounting records which can grow rapidly depending on how frequently you process and remove them from the CAR disk. If CAR runs out of disk space, it could cause the loss of accounting information and the corruption of session management information.

Co-Existence With Other Network Management Applications

To achieve optimal performance, CAR should be the only application running on a single machine.



Note

Cisco Network Registrar and CAR cannot co-exist on the same machine.

You can choose to run collaborative servers such as an Oracle or SQL database system, an LDAP server, or another Solaris application. There are no known conflicts with any other Solaris applications.

You can configure CAR to avoid UDP port conflicts with other network management applications. The most common conflicts occur when other applications also use ports 2785 and 2786. Another possible conflict could be SNMP. If you configure and use SNMP on your CAR server, no other application can be configured to use SNMP on the CAR machine.

Related Documentation

The following is a list of the documentation for CAR 4.2. You can access the URLs listed for each document at www.cisco.com on the World Wide Web. We recommend that you refer to the documentation in the following order:

Cisco Access Registrar 4.2 Documentation Guide (78-18785-01)

http://cisco.com/en/US/docs/net_mgmt/access_registrar/4.2/roadmap/guide/ardocgd.html

Cisco Access Registrar 4.2 Installation and Configuration Guide (OL-17221-01)

http://cisco.com/en/US/docs/net_mgmt/access_registrar/4.2/installation/guide/incfg.html

Cisco Access Registrar 4.2 User Guide (OL-17222-01)

http://cisco.com/en/US/docs/net_mgmt/access_registrar/4.2/user/guide/users.html



Note

To know about the performance numbers of CAR 4.2, see CAR Collateral in http://www.in-nmbu.cisco.com/thevault/files/3284/5/Cisco_Access_Registrar_4.2_Performance_Guide.htm

Cisco Access Registrar 4.2 Licensing

CAR 4.2 uses a new licensing mechanism that enables you to activate all features in CAR. During system initialization, the CAR server sets up the licensing data model and activates all features.

In CAR 4.2, licensing is based on transactions per second (TPS). Every license will cover all features, but with restrictions enforced on the TPS. TPS is calculated based on the number of packets flowing into CAR irrespective of the feature.

License Slabs

The license slabs available in CAR 4.2 are listed in [Table 4](#).

Table 4 CAR 4.2 License Slabs

Product	Description
AR-4.2-BASE-K9	CAR base license. Limited to 100 transactions per second.
AR-4.2-100TPS=	CAR additional license per server. Limited to 100 transactions per second.
AR-4.2-200TPS=	CAR additional license per server. Limited to 200 transactions per second.

Table 4 **CAR 4.2 License Slabs (continued)**

Product	Description
AR-4.2-500TPS=	CAR additional license per server. Limited to 500 transactions per second.
AR-4.2-1000TPS=	CAR additional license per server. Limited to 1,000 transactions per second.
AR-4.2-2000TPS=	CAR additional license per server. Limited to 2,000 transactions per second.
AR-4.2-3000TPS=	CAR additional license per server. Limited to 3,000 transactions per second.
AR-4.2-5000TPS=	CAR additional license per server. Limited to 5,000 transactions per second.
AR-4.2-SECONDARY=	CAR secondary license. Required for each secondary server—back-end or stand-by.
AR-4.2-UP-3.X-K9	CAR upgrade license for R3.x customers, with or without SAS contract. Limited to 1000 transactions per second.
AR-4.2-UP-4.X-K9	CAR upgrade license for R4.0 and R4.1 customers, without SAS contract. Limited to 1000 transactions per second.

Getting Cisco Access Registrar 4.2 License

When you order the CAR 4.2 product, a text license file will be sent to you in e-mail. If you are evaluating the software, Cisco will provide you with an evaluation license.

If you decide to upgrade your CAR software, a new text license file will be sent to you in e-mail.



Note

While upgrading to CAR 4.2, the licenses of previous versions cannot be used. Backward compatibility support in terms of license will not be available in this version.

If you receive a Software License Claim Certificate, you can get your CAR license file at one of the two following URLs:

- www.cisco.com/go/license
Use this site if you are a registered user of Cisco.com
- www.cisco.com/go/license/public
Use this site if you are not a registered user of Cisco.com.

Within one hour of registration at either of the above web sites, you will receive your license key file and installation instructions in e-mail.

Installing Cisco Access Registrar 4.2 Licenses

You must have a license in a directory on the CAR machine before you attempt to install CAR software. If you have not installed the CAR license file before beginning the software installation, the installation process will fail.

You can store the CAR license file in any directory on the CAR machine. During the installation process, you will be asked the location of the license file, and the installation process will copy the license file to the `/opt/CSCOAr/license` directory, or `$INSTALL/license` if you are not using the default installation location.

The license file might have the name `ciscoar.lic`, but it can be any filename with the suffix `.lic`. To install the CAR license file, you can copy and paste the text into a file, or you can simply save the file you receive in e-mail to an accessible directory.

Adding Additional Cisco Access Registrar 4.2 Licenses

If you add additional licenses, you can open the file in `/opt/CSCOAr/license` and add additional lines to the license file, or you can create an additional license file to hold the new lines. If you add a new file, remember to give it a `.lic` suffix. You must restart the CAR server for the new license to take effect. To restart the CAR server, enter the following on the server command line:

```
/opt/CSCOAr/bin/arserver restart
```

Sample License File

The following is an example of a CAR 4.2 license file.

```
INCREMENT AR-BASE-100TPS cisco 4.2 30-Nov-2008 uncounted
  HOSTID=ANY \
  NOTICE="<LicFileID>2008090307</LicFileID><LicLineID>0</LicLineID> \
  <PAK>dummyPak</PAK>" SIGN=ABCDEF123456
INCREMENT AR-ADD-TPS cisco 4.2 30-Nov-2008 uncounted \
  VENDOR_STRING=<count>100</count> HOSTID=ANY \
  NOTICE="<LicFileID>2008090307</LicFileID><LicLineID>1</LicLineID> \
  <PAK>dummyPak</PAK>" SIGN=ABCDEF123456
```

Displaying License Information

CAR provides two ways of getting license information using `aregcmd`:

- `aregcmd` command-line option
- Launching `aregcmd`

aregcmd Command-Line Option

CAR provides a new `-l` command-line option to `aregcmd`. The syntax is:

```
aregcmd -l directory_name
```

where `directory_name` is the directory where the CAR license file is stored.

The following is an example of the `aregcmd -l` command:

```
aregcmd -l /opt/CSCOAr/license
Licensed Application: Cisco Access Registrar (Standard Version)
```

Following are the licensed components:

NAME	VERSION	EXPIRY_INFO	COUNT
------	---------	-------------	-------

```

=====
AR-Base-100TPS      4.2      30-Nov-2008      100
AR-ADD-TPS          4.2      30-Nov-2008      100
=====

```

Launching aregcmd

The CAR server displays license information when you launch **aregcmd**, as shown in the following:

aregcmd

```

Cisco Access Registrar 4.2.1 Configuration Utility
Copyright (C) 1995-2008 by Cisco Systems, Inc. All rights reserved.
Logging in to localhost

```

```

[ //localhost ]
LicenseInfo = AR-Base-100TPS 4.2 (expires on 30-Nov-2008)
              AR-ADD-TPS 4.2 (expires on 30-Nov-2008)
Radius/
Administrators/

```

```

Server 'Radius' is Running, its health is 10 out of 10

```

Caveats

This section provides information about known anomalies in CAR 4.2 and information about anomalies from previous versions of CAR that have been fixed.

- [Anomalies Fixed in Cisco Access Registrar 4.2.2, page 12](#)
- [Known Anomalies in Cisco Access Registrar 4.2, page 16](#)
- [Anomalies Fixed in Cisco Access Registrar 4.2, page 18](#)

Anomalies Fixed in Cisco Access Registrar 4.2.2

Table 5 lists the anomalies fixed in CAR 4.2.2.

Table 5 *Anomalies Fixed in CAR 4.2.2*

Bug	Description
CSCse45392	<p>The SNMP Agent is not sending the carServerStop trap when stopping the Server Agent.</p> <p>Symptoms: The Cisco AR server occasionally fails to send the carServerStop trap when the server has been stopped.</p> <p>Condition: This might occur when you attempt to stop the Cisco AR server.</p> <p>Workaround: None.</p>
CSCsi58070	<p>SessionKeyLookup feature uses default session manager when queried session is present in pending removal cache.</p> <p>Symptoms: Cisco AR uses a default session manager to update or create the session when doing a lookup.</p> <p>Conditions: This occurs when the session being looked up by an Ascend-IPA-Allocate request is present in pending removal cache.</p> <p>Workaround: Set the pending removal delay to zero in the cache resource manager.</p>
CSCsl29318	<p>Policy engine rules ExecRealmRule and ExecSuffixRule using the question mark (?) in regular expressions not working properly</p> <p>Symptoms: Both ExecReamRule and ExecSuffixRule match realms and suffixes that they should not match and behave similar to specifying a wild card.</p> <p>Conditions: This occurs when the question mark is used as the first character in the ExecReamRule or ExecSuffixRule.</p> <p>Workaround: None.</p>
CSCsj91620	<p>Unable to release certain sessions.</p> <p>Symptoms: In Cisco Access Registrar 4.1.2, it might be possible to encounter conditions in which user sessions are not properly logged out. If per-user session limits are used, affected users might eventually be unable to connect.</p> <p>Evidence of this can be found when running the release-sessions command. If affected, output will be similar to the following:</p> <pre> --> release-sessions /radius with-User user1@cisco.com Released 1 session(s) with-User user1@cisco.com for /Radius/SessionManagers --> release-sessions /radius with-User user1@cisco.com Released 1 session(s) with-User user1@cisco.com for /Radius/SessionManagers --> query-sessions /radius Sessions for /Radius: Sessions for /Radius/SessionManagers/SessionLM: S2 Key: 10.0.0.1, NAS: 192.168.0.1, NAS-Port: 0, User-Name: user1@cisco.com, Time: 510:09:24 </pre> <p>Conditions: Issue seen with user traffic on Cisco AR version 4.1.2. Issue is intermittent and does not appear to affect all accounts.</p> <p>Workaround: Repeated use of the release-session command does eventually release the session. Releasing the sessions via the GUI can occasionally work as well. Older sessions can be prevented from running into this by using "Stale session Timeout".</p>

Table 5 **Anomalies Fixed in CAR 4.2.2 (continued)**

Bug	Description
CSCsw36990	<p>Packet type is missing with ExecRealmRule and ExecSuffixRule.</p> <p>Symptoms: When any of the rules fail, the packet type is modified with " "(empty), and returns the error "The packet type is not correct".</p> <p>Conditions: The scripts ExecRealmRule and ExecSuffixRule is not working with "OR" rule when the particular user is present in the second rule and not in first rule.</p> <p>Workaround: None.</p>
CSCsx12877	<p>Unable to start Error Assertion failed: size > 0; file ahead_global.cpp.</p> <p>Symptoms: AR fails to start and the following error message appears in the name_radius_1_log:</p> <pre>12/01/2008 1:22:33 name/radius/1 Error System 0 Assertion failed: size > 0; file ahead_global.cpp, line 49, data 0x0</pre> <p>Conditions: When the _TLSSessionStore file in /opt/CSCOar/temp is corrupted.</p> <p>Workaround:</p> <ol style="list-style-type: none"> <li>1. Stop the ARserver: <code>/etc/init.d/arserver stop</code> <li>2. Rename _TLSSessionStore: <code>mv /opt/CSCOar/temp/_TLSSessionStore /opt/CSCOar/temp/_TLSSessionStore.bak</code> <li>3. Restart AR: <code>/etc/init.d/arserver start</code>
CSCsx28791	<p>CAR cores when EAP-TTLS authenticator is timed out during authentication</p> <p>Symptoms: CAR restarts and produces a core during EAP-TTLS authentication with inner method odbc server. The log/trace message contains "invalid data in EAP request".</p> <p>Conditions: Inner method might cause delay to complete authentication.</p> <p>Workaround: Increase the AuthenticationTimeout value under EAP Services.</p>
CSCsx50129	<p>Validation check is not getting executed on unfiltered session managers.</p> <p>Symptoms: While validating //localhost, the following errors were found.</p> <pre>/Radius/Advanced/SessionPurgeInterval: Dependent property either SessionTimeout or PhantomSessionTimeout should be set in atleast one of SessionManager</pre> <p>These errors must be corrected before saving.</p> <p>Conditions: Filter one session manager and delete that session manager.</p> <p>Workaround: Unfilter the session manager, before executing the 'save' command.</p>

Table 5 Anomalies Fixed in CAR 4.2.2 (continued)



Bug	Description
CSCsw44934	<p>Upgrade from 4.1.5 to 4.2 failed with segmentation fault.</p> <p>Symptoms: Upgrade from CAR 4.1.5 to CAR 4.2 failed with the following error.</p> <pre> Mcdadmin-level upgrade completed Aregcmd-level upgrade in progress Configuration DB analysis is in progress Wait../opt/CSCOar/.upgrade/upgrade-ar.sh: line 97: 24003 Segmentation fault CALL_AREGCMD ls -R /Radius >\$ORIGLS The upgrade procedure has failed. To restart, you must first uninstall AR with pkgrm, and then install again with pkgadd. error: %post(CSCOar-4.2.1-1225991489.i386) scriptlet failed, exit status 139 </pre> <p>Conditions: Total number of SessionManager objects configured in the CAR is greater than 64.</p> <p>Workaround: Perform the following steps.</p> <ol style="list-style-type: none"> 1. Stop the AR server and back up existing 4.1.5 configurations. <pre> /cisco-ar/bin/mcdadmin -se /tmp/mcd-config-4.1.5.txt </pre> <ol style="list-style-type: none"> a. copy all the session backing store files from /cisco-ar/data/radius/* to /tmp/session-backingstore-files/* b. copy all the packet backing store files from /cisco-ar/data/odbc/* to /tmp/packet-backingstore-files/* 2. Export the session manager details from the existing CAR 4.1.5 configuration. <pre> /cisco-ar/bin/mcdadmin -se /tmp/only-session-manager.txt -p "/servers/name/radius/1/providers/provider1/sessionmanagers/" </pre> 3. Remove the session manager details from the existing CAR 4.1.5 configuration. <pre> /cisco-ar/bin/mcdadmin -s -R "/servers/name/radius/1/providers/provider1/sessionmanagers/" </pre> 4. Export the modified CAR 4.1.5 configuration. <pre> mcdadmin -se /tmp/mcd-config-without-sessionmanagers.txt </pre> 5. Append the following lines in to the file "/tmp/mcd-config-without-sessionmanagers.txt". <pre> [servers/name/radius/1/providers/provider1/sessionmanagers] _version = int32:[0]367 </pre> 6. Import the file "/tmp/mcd-config-without-sessionmanagers.txt" into CAR. <pre> /cisco-ar/bin/mcdadmin -scoi /tmp/mcd-config-without-sessionmanagers.txt </pre> 7. Uninstall CAR 4.1.5 and Upgrade to CAR 4.2. 8. Stop the AR sever and import the session manager detail into CAR. <pre> /cisco-ar/bin/mcdadmin -si /tmp/only-session-manager.txt </pre> 9. Start the AR server. <p> Note The workaround suggested above does not allow you to manipulate the session manager objects.</p>

Table 5 *Anomalies Fixed in CAR 4.2.2 (continued)*

Bug	Description
CSCsu76289	<p>User-Name in session should have outer identity instead of inner identity.</p> <p>Symptoms: WiMAX session manager unable to cache the outer identity of an user.</p> <p>Conditions: A variable that will set the session manager to cache outer or inner identity as needed.</p> <p>Workaround: Set the newly introduced environment variable "Cache-Outer-Identity" to TRUE, WiMAX session manager will cache the outer identity.</p> <p> Note If it is set to FALSE, the WiMAX session manager will cache the inner identity. The value is set to FALSE by default.</p>
CSCsy34221	<p>AttributesToBeCached attributes are not replicated to slave AR server.</p> <p>Symptoms: AR Replication does not propagate changes made to /Radius/ResourceManagers/<...>/AttributesToBeCached.</p> <p>Conditions: Issue is experienced only for attributes under AttributesToBeCached object. All other objects continue to be replicated properly.</p> <p>Workaround: Perform Full Resynchronization. For details on how to perform full resync please refer to Chapter 11, "Using Replication," of Cisco CNS Access Registrar User Guide.</p>
CSCsx19905	<p>CAR4.2.1 Upgrade does not migrate existing tclscript script file.</p> <p>Symptoms: When upgrading to CAR 4.2.1, the tcl script file is replaced with a new file resulting in loss of earlier configuration details.</p> <p>Conditions: Some of the configuration files are not restored on upgrade to CAR 4.2.1.</p> <p>Workaround: Before upgrading, backup the existing file to prevent any loss of data. After upgrading, replace the /opt/CSCOar/scripts/radius/tcl/tclscript.tcl with the backup file.</p>
CSCsy70769	<p>CAR need to support certificates signed with SHA256 digest algorithm.</p> <p>Symptoms: TLS accept status (-1): (1) error:0D0890A1:asn1 encoding routines:ASN1_verify:unknown message digest algorithm.</p> <p>Conditions: sha256 with RSAEncryption signature algorithm used in X.509 certificate.</p> <p>Workaround: None.</p>

Known Anomalies in Cisco Access Registrar 4.2

Table 6 lists the known anomalies in CAR 4.2.

Table 6 *Known Anomalies in CAR 4.2*

Bug	Description
CSCei28524	<p>Unset done to LDAPToRadiusMappings and to LDAPToEnvMappings are not saved during concurrent use.</p> <p>Symptoms: Unset done on LDAPToRadiusMappings is not saved.</p> <p>Conditions: This occurs when you are running multiple aregcmd sessions and editing the LDAPToRadiusMappings of the same LDAP remote server.</p> <p>Workaround: Edit the mappings using only one aregcmd session.</p>
CSCei40188	<p>LDAP server does not show some parameters after doing a concurrent save.</p> <p>Symptoms: The configuration of a remote LDAP server does not show some parameters after concurrent save, but no data loss occurs.</p> <p>Conditions: This might occur when two aregcmd sessions edit the same LDAP server concurrently.</p> <p>Workaround: Ignore the missing parameters, or use only one aregcmd session to modify remote LDAP server parameters.</p>
CSCse38053	<p>aregcmd reports an error after you edit a client object using the GUI, and save the configuration using the aregcmd save command.</p> <p>Symptoms: aregcmd reports the following error:</p> <pre>The following errors were found and must be corrected before saving: /Radius/Clients/localhost/DynamicAuthorizationServer/DynamicAuthSharedSecret: Value not set. /Radius/Clients/localhost/NotificationProperties/NotificationAttributeGroup: Value not set. 312 Validation failed</pre> <p>Conditions: The problem occurs when you do the following:</p> <ol style="list-style-type: none"> 1. Log in to aregcmd and change directory to /Radius/Clients/localhost. 2. Log in to the GUI and select Configure > Clients to display all configured clients. 3. Using the GUI, choose localhost. to detailed information and do the following: <ol style="list-style-type: none"> a. Check the Enable Dynamic Auth Server checkbox. b. Check the Enable Notifications checkbox. c. Set the Notification group to default. 4. Click Submit. 5. In the aregcmd session, enter the save command. <p>Workaround: Log in to aregcmd after you click Submit on the GUI to save configuration changes made to clients.</p>
CSCse40151	<p>When using the GUI to add users, an error occurs when adding users in a specific order.</p> <p>Symptoms: The GUI occasionally reports an internal exception error when adding a user.</p> <p>Conditions: This might occur when you add users continuously in reverse alphabetical order.</p> <p>Workaround: Try to add users in alphabetical order according to their user ID.</p>

Table 6 **Known Anomalies in CAR 4.2 (continued)**

Bug	Description
CSCse45392	<p>The SNMP Agent is not sending the carServerStop trap when stopping the Server Agent.</p> <p>Symptoms: The CAR server occasionally fails to send the carServerStop trap when the server has been stopped.</p> <p>Conditions: This might occur when you attempt to stop the CAR server.</p> <p>Workaround: When stopping the CAR server using arserver stop, the SNMP process will also go down. When SNMP processes go down properly, the CAR server will send nsNotifyShutdown. When the CAR server sends the nsNotifyShutdown trap with ColdStart, this implies that the CAR server has gone down.</p>
CSCsf14072	<p>Inconsistent statistics.</p> <p>Symptoms: Under heavy loads, the counter totalResponses might be slightly low.</p> <p>Conditions: This might occur under heavy loads.</p> <p>Workaround: The sum of the counters for the different response types will give an accurate figure.</p>
CSCsh59354	<p>GUI session becomes view-only after validation fails for view-only properties.</p> <p>Symptoms: The GUI session is switched to view-only mode.</p> <p>Conditions: This occurs when the CAR server is configured with only one administrator, and you attempt to change the ViewOnly property of that administrator in the GUI.</p> <p>Workaround: Create additional administrator accounts before trying to modify your only administrator to view-only.</p>
CSCsi58070	<p>SessionKeyLookup feature uses default session manager when queried session is present in pending removal cache.</p> <p>Symptoms: CAR uses a default session manager to update or create the session when doing a look up.</p> <p>Conditions: This occurs when the session being looked up by an Ascend-IPA-Allocate request is present in pending removal cache.</p> <p>Workaround: Set the pending removal delay to zero in the cache resource manager.</p>
CSCsj07025	<p>Remote server statistics is not in synchronization with global statistics.</p> <p>Symptoms: Statistics might show that totalRequestsPending at oracle remote server is greater than totalPacketsInUse at the global statistics.</p> <p>Conditions: This occurs with the CAR server is running at an optimum load.</p> <p>Workaround: None.</p>
CSCsj91620	<p>Unable to release certain sessions.</p> <p>Symptoms: In Cisco AR 4.1.2, users might not be logged out properly. If per-user session limits are used, the affected users might eventually be unable to connect.</p> <p>Conditions: This issue is seen with user traffic on Cisco AR 4.1.2. The issue is intermittent and does not appear to affect all counts.</p> <p>Workaround: Use any one of the following:</p> <ol style="list-style-type: none"> 1. Use the release-session command several times until it eventually releases the session. 2. Release the sessions through the GUI. 3. Enable the StaleSessionTimeout property to prevent older sessions from running into this state.

Table 6 *Known Anomalies in CAR 4.2 (continued)*

Bug	Description
CSCsk04726	<p>Sessions of a deleted session manager are not removed from the backing store.</p> <p>Symptoms: Log message is printed for every reload: Session from removed/unknown session manager recovered from backing store. Session x is being discarded.</p> <p>Conditions: This occurs after a Session Manager has been created, but the session was deleted or renamed.</p> <p>Workaround: This problem does not affect the operation of the CAR server. Each time the CAR server does a reload, it will do extra processing to read these sessions from disk, then discard the sessions, also freeing the disk space.</p>
CSCsl29318	<p>Policy engine rules ExecRealmRule and ExecSuffixRule using the question mark (?) in regular expressions are not working properly</p> <p>Symptoms: Both ExecReamRule and ExecSuffixRule match realms and suffixes that they should not match and behave similar to specifying a wildcard.</p> <p>Conditions: This occurs when the question mark is used as the first character in the ExecReamRule or ExecSuffixRule.</p> <p>Workaround: None.</p>

Anomalies Fixed in Cisco Access Registrar 4.2

Table 7 lists the anomalies fixed in CAR 4.2.

Table 7 *Anomalies Fixed in CAR 4.2*

Bug	Description
CSCsl09569	<p>CAR does not recover after reaching 4GB memory limit.</p> <p>Symptoms: CAR crashes and produces core files when radius process consumes 4GB memory.</p> <p>Conditions: CAR is configured to handle large number of session records.</p> <p>Workaround: None.</p>
CSCsl69059	<p>aregcmd does not work after fresh install in SunFire V100 servers.</p> <p>Symptoms: aregcmd does not work after fresh install.</p> <p>Conditions: This happens on Solaris 10, but is not consistently occurring.</p> <p>Workaround: Restart CAR processes once and it will become normal.</p>
CSCsq53135	<p>CAR: Need to support newer ACS Remote Agent.</p> <p>Symptoms: CAR currently support ACS Remote Agent version 3.3.2.2. CAR should support a newer version of the ACS Remote Agent.</p> <p>Conditions: This is an enhancement request to have CAR support a newer version of the ACS Remote Agent.</p> <p>Workaround: Fixed in 4.2.</p>

Table 7 **Anomalies Fixed in CAR 4.2 (continued)**

Bug	Description
CSCsq93724	<p>EAP-TTLS attribute mapping does not work when using ext. server.</p> <p>Symptoms: Authentication fails when using EAP-TTLS-Mschapv2 authentication.</p> <p>Conditions: When performing EAP-TTLS with MSCAPV2 authentication using external db like odbc, ldap, and so forth, attribute mapping is not successful.</p> <p>Workaround: None.</p>
CSCsr14288	<p>CAR coa-request type data field empty.</p> <p>Symptoms: CAR coa-request type data field is empty when accessing via tcl script <code>environ get Request-Type</code>.</p> <p>Conditions: CoA need to be configured.</p> <p>Workaround: None.</p>
CSCsr67915	<p>CAR 4.1.4 stops responding to queries and generates a crash.</p> <p>Symptoms: CAR is crashing. It stops responding to queries.</p> <p>Conditions: This occurs at Random intervals.</p> <p>Workaround: None.</p>
CSCsr80519	<p>When a radius process is reloaded or stopped using <code>aregcmd</code>, while the radius packet is being processed, the process crashes.</p> <p>Symptoms: Radius process crashes and restarts.</p> <p>Conditions: When radius is stopped, started or reloaded while processing traffic.</p> <p>Workaround: If possible the server can be taken offline before reload.</p>
CSCso70606	<p>ODBC accounting fails due to HOT configuration.</p> <p>Symptoms: Some accounting packets do not get into the ODBC database.</p> <p>Conditions: This happens when packet buffering is enabled in ODBC accounting service, and HOT configuration happens along with ODBC accounting service, processing some accounting packets at the same time.</p> <p>Workaround: Fixed in 4.2.</p>
CSCsl16760	<p>Global TCL procedures are not available above a certain number of scripts.</p> <p>Symptoms: Several TCL scripts are configured in CAR. Beyond a certain number of scripts, procedures from one script file might not be accessible by another script file.</p> <p>Conditions: More than 25 script files are configured within CAR, but they make use of common procedures that are written in a global TCL script file.</p> <p>Workaround: Using source command to include global tcl file.</p>

Table 7 Anomalies Fixed in CAR 4.2 (continued)

Bug	Description
CSCse69600	<p>Default port for RemoteServer is incorrect when you change an existing RemoteServer type from LDAP to RADIUS.</p> <p>Symptoms: The default port numbers given for RADIUS remote server is different than the standard port numbers.</p> <p>Conditions: This occurs in aregcmd, when changing the protocol type of existing remote server from LDAP to RADIUS.</p> <p>Workaround: When you change the type of an existing RemoteServer, change the port numbers manually to standard ports. Use 1812 (or 1645) for authentication and 1813 (or 1646) for accounting.</p>
CSCse92076	<p>Too many data source connections on Linux causes a hang on reload with tracing.</p> <p>Symptoms: The RADIUS server hangs after a reload command is issued on a RHEL 4.0 machine.</p> <p>Conditions: This might occur if tracing is enabled and the number of data source connections for an LDAP remote server is changed from an excessively large number to a small number.</p> <p>Workaround: Do not set the number of data source connections to large values. In many cases this will lead to poorer performance.</p>
CSCsh94492	<p>The CAR server occasionally fails to start if Kernel File Descriptor count is less than 1024.</p> <p>Symptoms: Occasionally the CAR server fails to start and displays the following message in name_radius_1_log:</p> <pre>02/23/2007 5:46:37 name/radius/1 Error System 0 wanted to set RLIMIT_NOFILE to 1024, max is 256 02/23/2007 5:46:39 name/radius/1 Error System 0 Server did not start properly, shutting down</pre> <p>Conditions: This occurs when setting kernel file descriptor count property to a value less than 1024.</p> <p>Workaround: Set the kernel file descriptor count property to 1024.</p>
CSCsl29283	<p>Authentication passed even though the policy engine failed.</p> <p>Symptoms: Authentication is done even when policy engine fails.</p> <p>Conditions: This occurs in both ExecReamRule and ExecSuffixRule when the rules are grouped with ampersand (&) character, and at least one rule is matched, but the policy has failed.</p> <p>Workaround: None.</p>
CSCsv29702	<p>CAR server reloads every 20 minutes.</p> <p>Symptoms: Radius server crashes and generates core at random.</p> <p>Conditions: When QueryKey property in Session-Cache resource manager has no value.</p> <p>Workaround: Fixed in CAR 4.2.</p>
CSCsv34015	<p>Large av-pairs get corrupted after a replication.</p> <p>Symptoms: User-list on slave server is truncated and does not display the full list that is in the primary server. The user with the long av-pair attribute is not displayed in aregcmd on the slave and also no other user after that point (alphabetically) is displayed in aregcmd. However, the users are listed in the MCD database.</p> <p>Conditions: This occurs when replicating a user-list entry for a user with an av-pair attribute value that is very long.</p> <p>Workaround: Perform a manual synchronization between the two boxes.</p>

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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